TA-F222ESR/F530ES

SERVICE MANUAL

Canadian Model
AEP Model
UK Model
TA-F530ES

E Model
TA-F222ESR

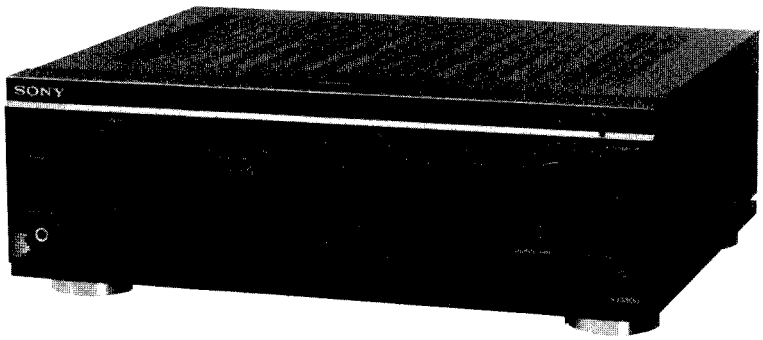


photo : TA-F530ES

SPECIFICATIONS

Amplifier section

Item	Condition		Data
Continuous RMS power outut (both channels driven simultaneously)	4 ohms, 20 Hz-20 kHz THD 0.008%	Canadian, UK, E model	120 W + 120 W (THD 0.01%) (DIN: 160 W + 160 W)
	6 ohms, 20 Hz-20 kHz THD 0.006%	Canadian, UK, E model	100 W + 100 W (DIN: 120 W + 120 W)
		AEP, West Germany model	95 W + 95 W (DIN: 115 W + 115 W)
	8 ohms, 20 Hz-20 kHz THD 0.004%	Canadian, UK, E model	90 W + 90 W (DIN: 110 W + 110 W)
		AEP, West Germany model	80 W + 80 W (DIN: 100 W + 100 W)
Power band width (IHF)	8 ohms, THD 0,02%		10 Hz - 100 kHz at 45 W
Dynamic headroom ('78 IHF)	4 ohms		2 dB
	8 ohms		1.2 dB
Total harmonic distortion	8 ohms, at 10 watt output		0.003%
Intermodulation (IM) distortion 60 Hz: 7 kHz = 4:1	4 ohm, at rated output		0.008%
	6 ohms at rated output		0.006%
	8 ohms at rated output		0.004%
Damping factor	8 ohms, 1 kHz		50
Residual noise	network A		less than 90μV
Frequency response	PHONO MM		RIAA equalization curve ±0.2 dB
	TUNER, CD, TAPE 1, 2, 3, DIRECT IN		2 Hz – 200 kHz $^{+0}_{-3}$ dB

—Continued on page 2—

MICROFILM

INTEGRATED STEREO AMPLIFIER

SONY®

Item	Condition		Data
Input sensitivity	PHONO	MC	0.17 mV, 100 ohms.
		MM	2.5 mV, 50 kohms
	TUNER, CD, DIRECT IN, TAPE 1, 2, 3 ADAPTOR IN		150 mV, 50 kohms
S/N (network)	PHONO	MC	68 dB 76 dB* (A)
		MM	80 dB 87 dB* (A)
*78 (IHF)	TUNER, CD, DIRECT IN, TAPE 1, 2, 3 ADAPTOR IN		84 dB 105 dB* (A)
Output voltage impedance	REC OUT 1, 2, 3 ADAPTOR OUT		150 mV, 1 kohm
	HEADPHONES		25 miliwatts (at 8 ohms) Accepts low and high impedance headphones.
Tone controls	BASS, at 100 Hz		±6 dB (turnover freq. 400 Hz)
	TREBLE, at 10 kHz		±6 dB (freq. 4 kHz)

General

System Preamplifier section: Low-noise high gain NFB type equalizer amplifier, passive type direct tone control
Power amplifier section: Pure-complementary SEPP power amplifier

Power requirements
AEP, West Germany model : 220 V AC, 50 Hz
U K model: 240 V AC, 50 Hz
E model : 120 V, 220 V or 240 V AC adjustable, 50/60 Hz
Canadian model : 120 V AC, 50/60Hz

Power consumption

Canadian model	510 VA
AEP, UK, West Germany model	220 W
UK model	600 W
E model	340 W

AC outlet

Canadian model	2 switched, 1 unswitched, 100 watts max. each
AEP, UK, West Germany model	—
E model	1 switched, 1 unswitched, 100 watts each

Dimensions

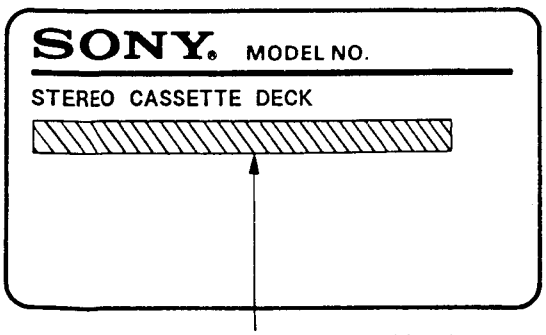
Approx. 430 x 150 x 370 mm (w/h/d)
(17 x 5 7/8 x 14 9/16 inches)

Weight

Approx. 13.5 kg (29 lbs 13 oz) net

MODEL IDENTIFICATION

– Specification Label –



Canadian model : AC 120V 60Hz
AEP, West Germany model : AC 220V~50/60Hz
UK model : AC 240V~50/60Hz
E model : AC 120/220/240V~50/60Hz

TABLE OF CONTENTS

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Model Identification ····· 2
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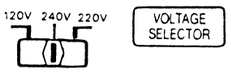
SERVICING NOTES

On operating voltage

Before operating the unit, check that the operating voltage of your unit is identical with the voltage of your local power supply.

Where purchased	Operating voltage
UK Model	240 V AC
Canadian Model	120V AC
AEP, West Germany Model	220 V AC
E Model	120 V, 220 V or 240 V AC adjustable by AC voltage selector



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

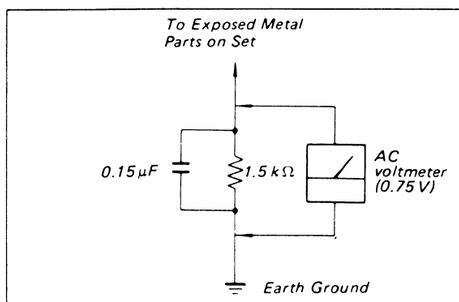
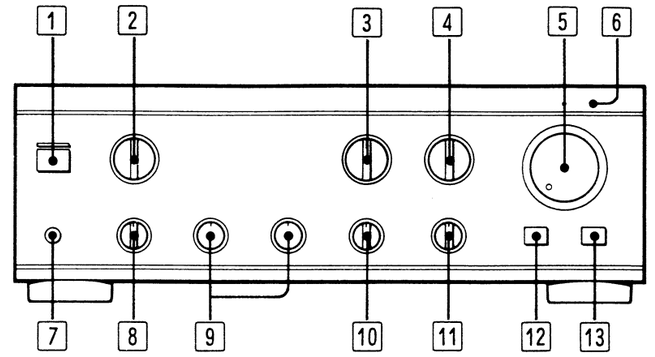


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

PARTS IDENTIFICATION



1 POWER switch and power/standby indicator
Immediately after turning ON the power, the standby indicator lights in red as the built-in muting circuit activates.
When the amplifier stays in a stable operating condition, the indicator lights in green.
The indicator lights in red when the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components.
In such a case, disconnect the power source and check the connected components and speaker systems.

2 SPEAKERS selector
Select speaker system A or B, or both.

3 ADAPTOR/DIRECT IN switch
Set to NORMAL to select program source by INPUT SELECTOR. To listen to a program source processed through adapter (graphic equalizer, for example) connected to ADAPTOR jacks, set the selector to ADAPTOR.
To listen to a program source connected to DIRECT IN jacks, set it to DIRECT IN.
Note that selecting ADAPTOR has no effect upon the signals output through the REC OUT jacks.

4 INPUT SELECTOR
Selects the desired program source.

5 ATTENUATOR knob
Regulates the sound level.

6 MUTING switch and indicator
Generally, keep the switch released (OFF).
Depress the switch to reduce the sound level by 20 dB. (Output voltage becomes 1/10.)

7 HEADPHONES jack (stereo phone jack)

8 MODE selector
STEREO: For listening to a stereo program.
MONO: For listening to a monaural program.

9 BASS and TREBLE controls

10 REC OUT SELECTOR
Selects the program source sent to the REC OUT jacks (rear panel).

11 BALANCE control
Controls the sound level of left and right speakers.

12 SOURCE DIRECT switch and indicator

13 CARTRIDGE selector
Set the selector according to your cartridge.
MM: For moving-magnet type cartridge
MC: For moving-coil type cartridge

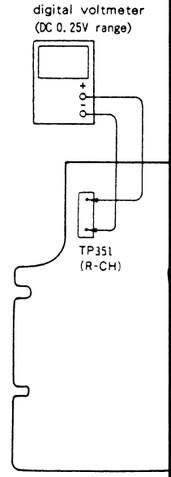
PRECAUTIONS

1. Adjust the id
   10-15 minute
2. Always make
   the power ar

[IDLING ADJUST

Procedure :
Set the ATTENU
adjust RT301 (L
voltmeter reads 7

Adjustment Locatio



6

dicator
ch released (OFF).
duce the sound level by 20 dB.
s 1/10.)

ereo phone jack)

o a stereo program.
monaural program.

ntrols

rce sent to the REC OUT jacks

of left and right speakers.
ch and indicator

g to your cartridge.
type cartridge
e cartridge

SECTION 2
ELECTRICAL ADJUSTMENTS

PRECAUTIONS

1. Adjust the idling after tuning the unit on for about 10-15 minutes, giving it time to warm up.

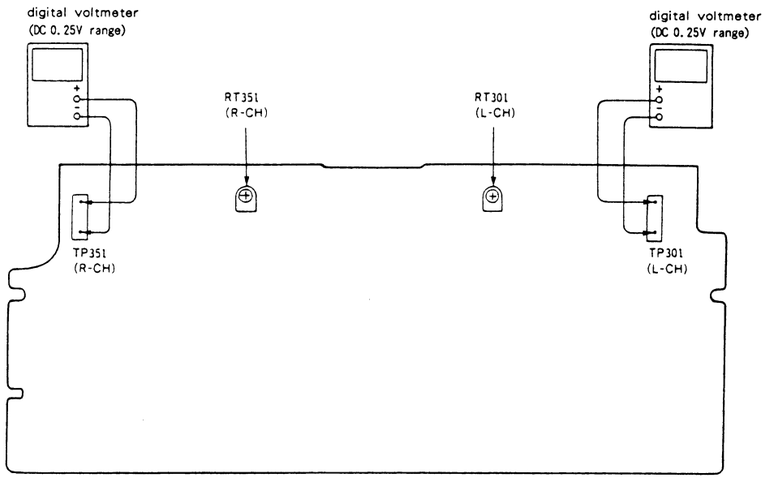
2. Always make sure to adjust the idling when repairing the power amp section or when replacing any parts.

[IDLING ADJUSTMENT]

Procedure :

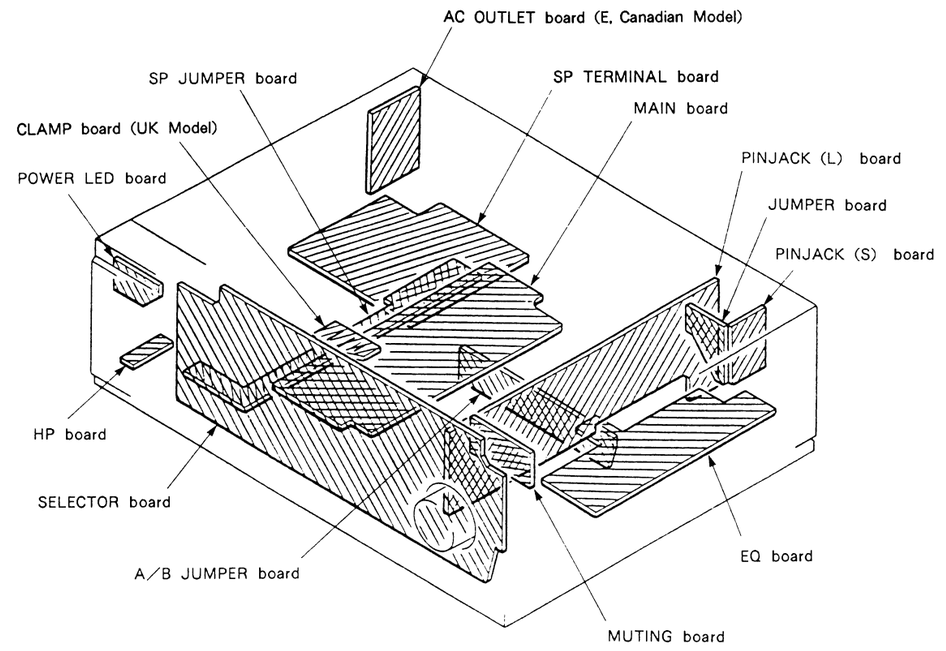
Set the ATTENUATOR control as low as possible and adjust RT301 (L-CH) and RT351 (R-CH) so that the voltmeter reads 7mV at TP301 (L-CH) and TP351 (R-CH).

Adjustment Location: power board

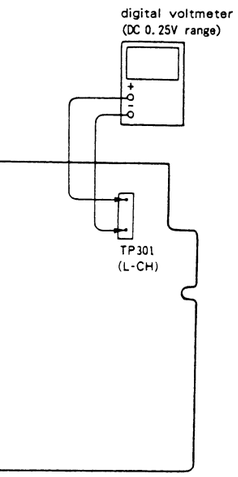


SECTION 3
DIAGRAMS

CIRCUIT BOARD LOCATION

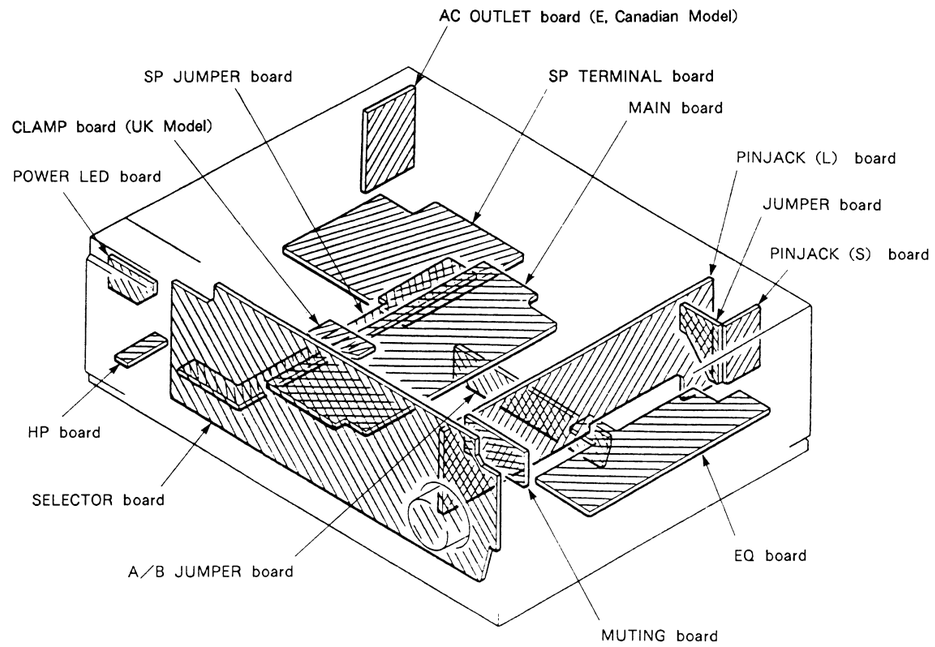


CTION 2
ADJUSTMENTS



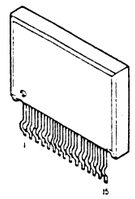
SECTION 3
DIAGRAMS

CIRCUIT BOARD LOCATION

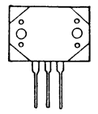


● Semiconductor Lead Layouts

STK-3102-3

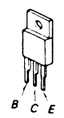


2SA1215M-O
2SC2921M-O

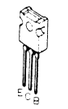


2SA733-Q
2SA988-F
2SC945-P
2SC2545

2SA985A
2SC2275-P

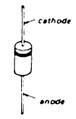


2SC3423

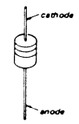


2SD774-3

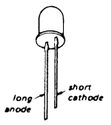
US1060M
UZL-16L
10E2N
30DF2



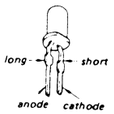
HZS-7B2L



SEL2510C



SEL2810A



3-1. PRINTED WIRING BOARDS

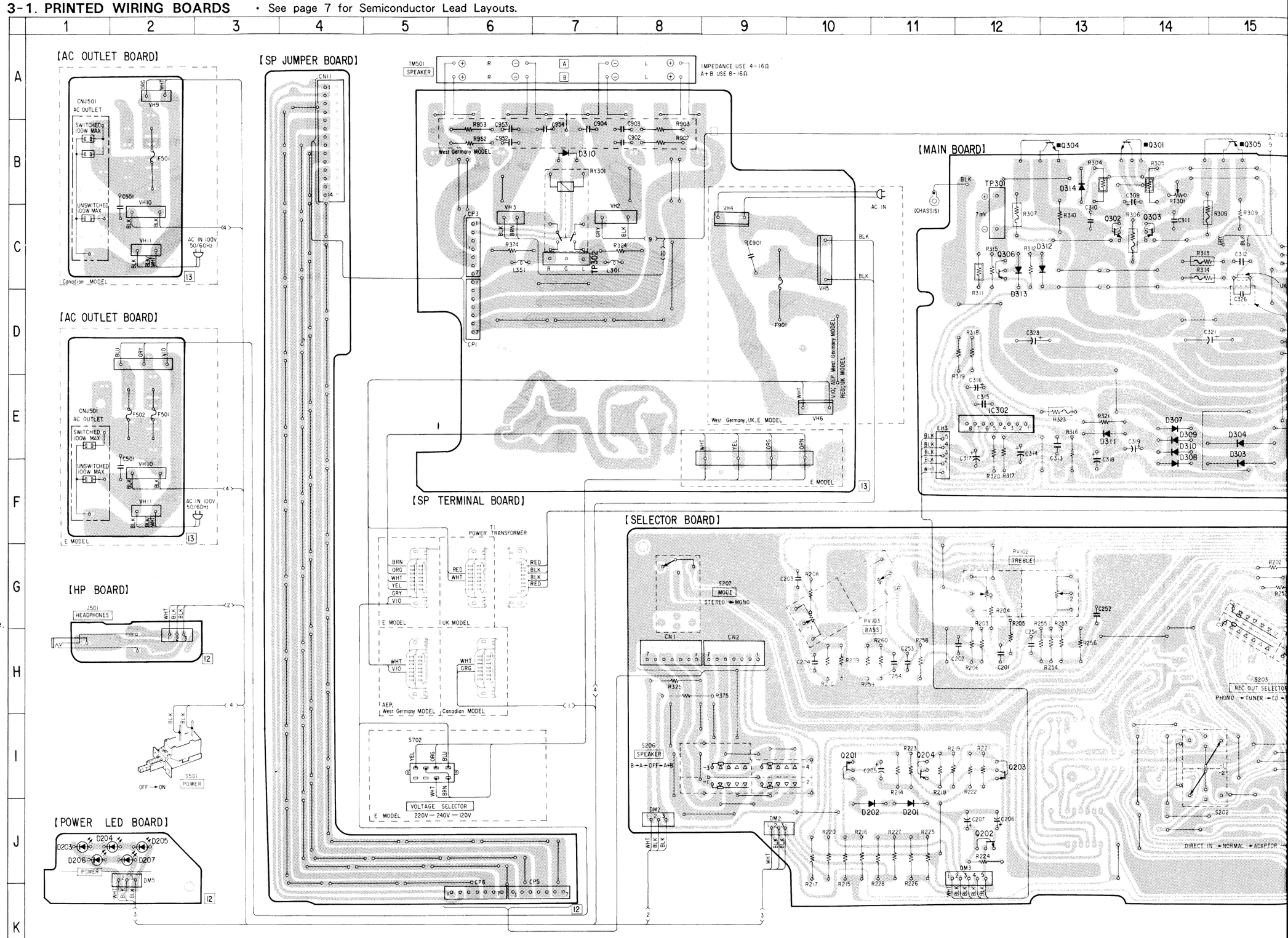
• See page 7 for Semiconductor Lead Layouts.

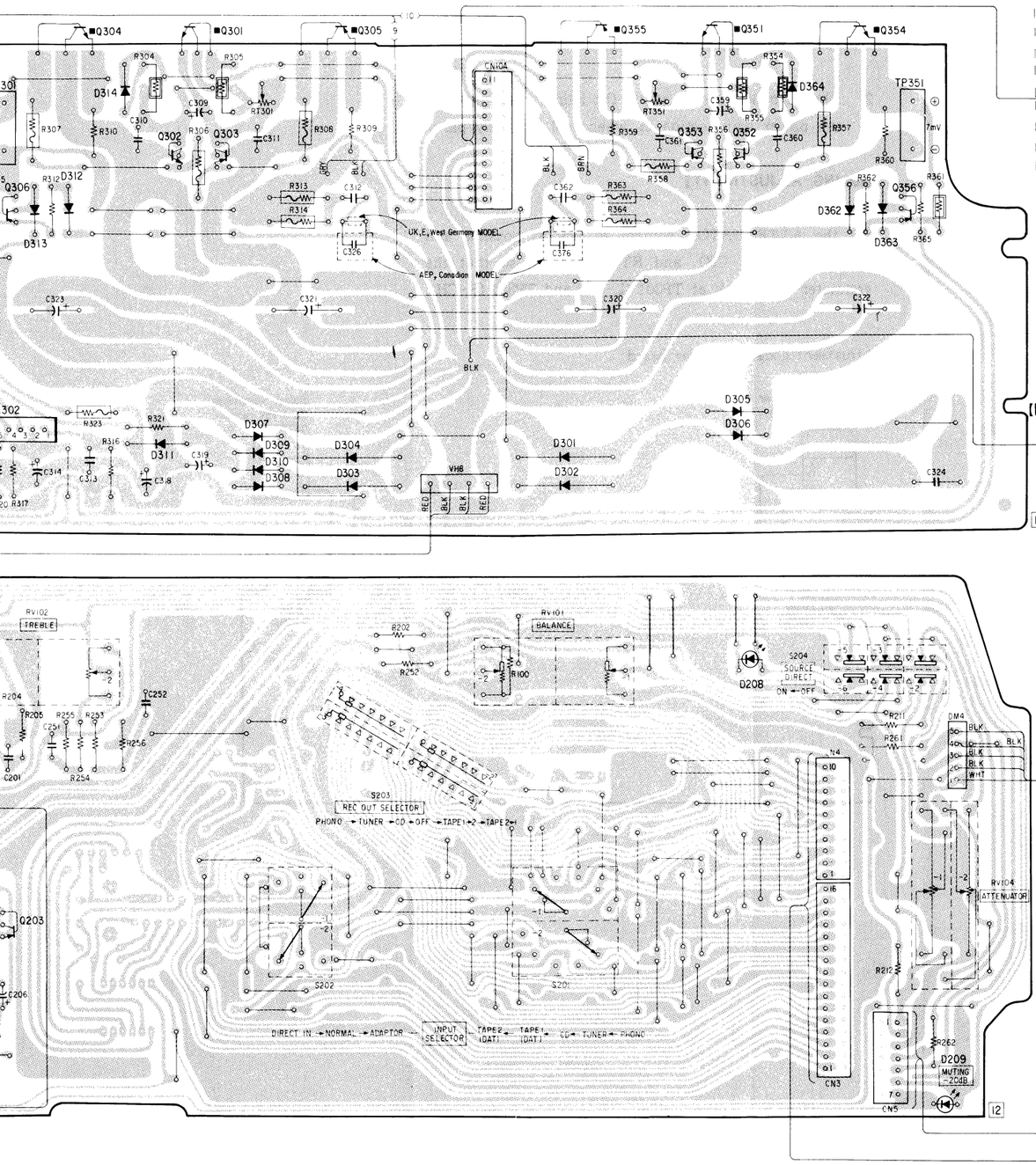
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D201	J-11	IC301	I-30
D202	J-11	IC302	E-12
D203	J-1	IC401	E-30
D204	J-2		
D205	J-2	Q201	I-10
D206	J-1	Q202	J-12
D207	J-2	Q203	I-12
D208	G-19	Q204	I-11
D209	K-20	Q301	B-14
D301	E-17	Q302	C-14
D302	F-17	Q303	C-14
D303	F-15	Q304	B-13
D304	E-15	Q305	B-15
D305	E-18	Q306	C-12
D306	E-18	Q351	B-18
D307	E-14	Q352	C-18
D308	F-14	Q353	C-18
D309	E-14	Q354	B-19
D310	F-14	Q355	B-17
D311	E-14	Q356	C-20
D312	C-13	Q401	D-30
D313	C-12	Q402	D-30
D314	B-13	Q403	F-31
D319	B-7	Q404	F-21
D362	C-19	Q451	D-29
D363	C-20	Q452	D-29
D364	B-19		
D401	F-30		
D402	F-30		
D403	F-29		

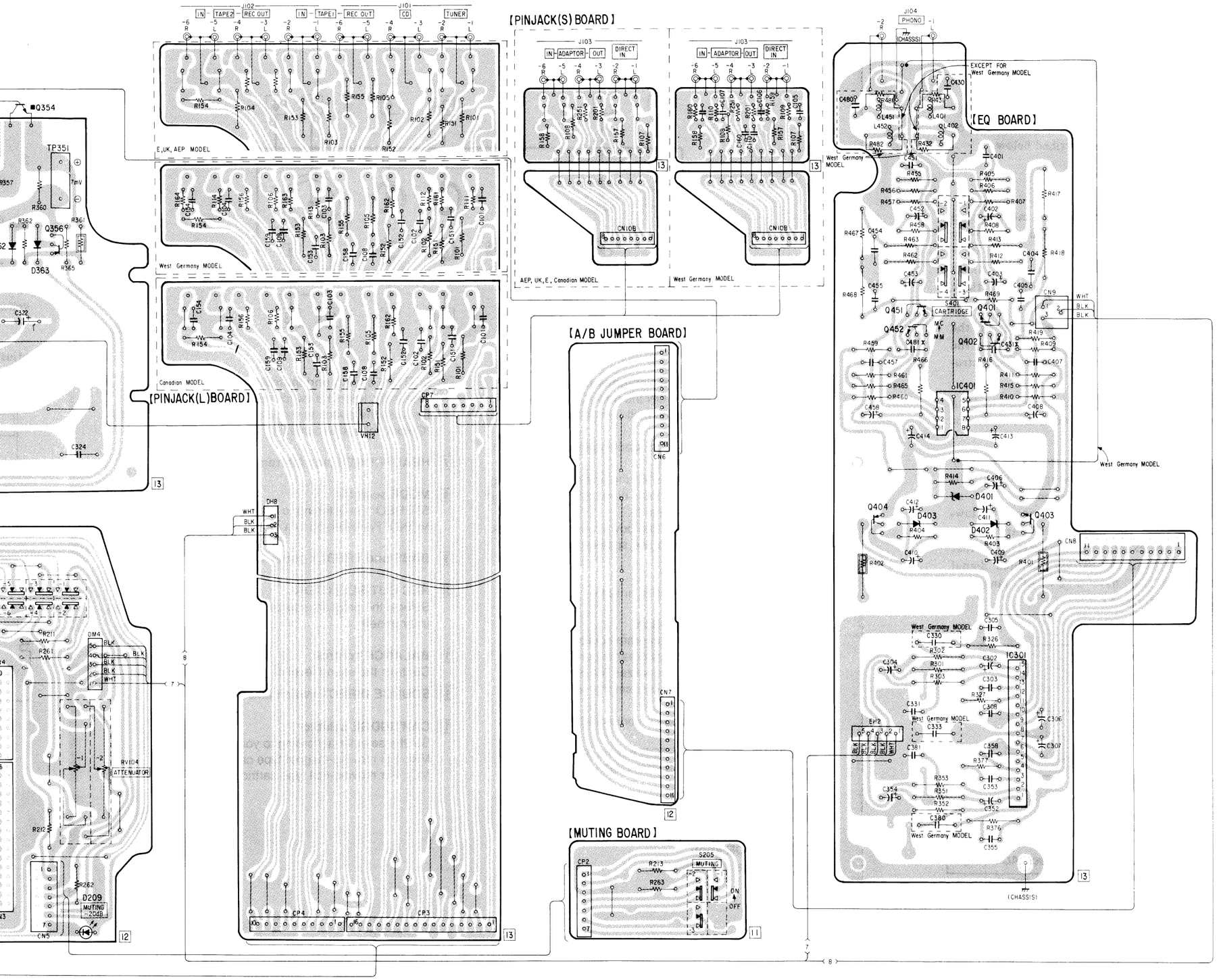
Note on Printed Wiring Boards :

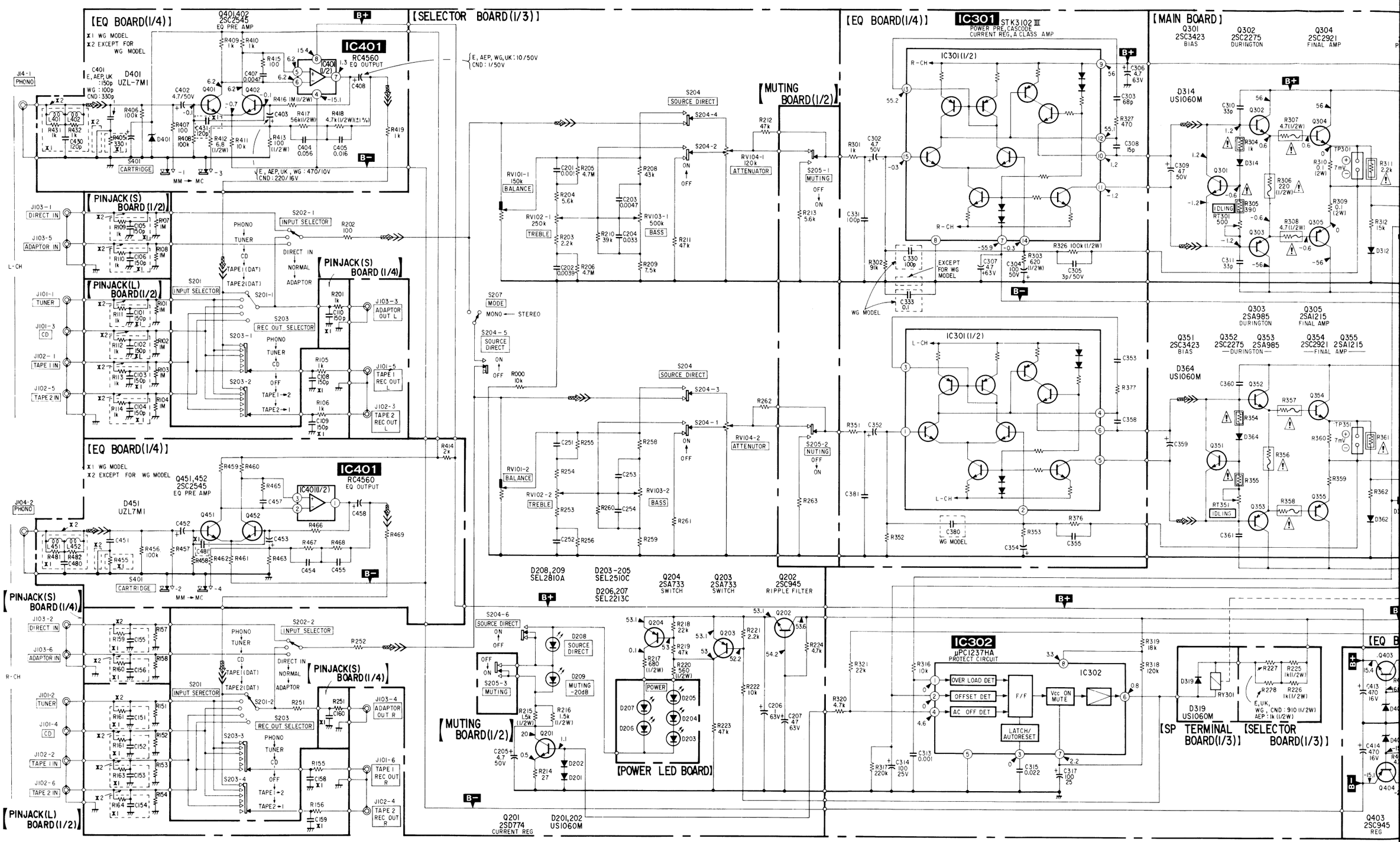
- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.



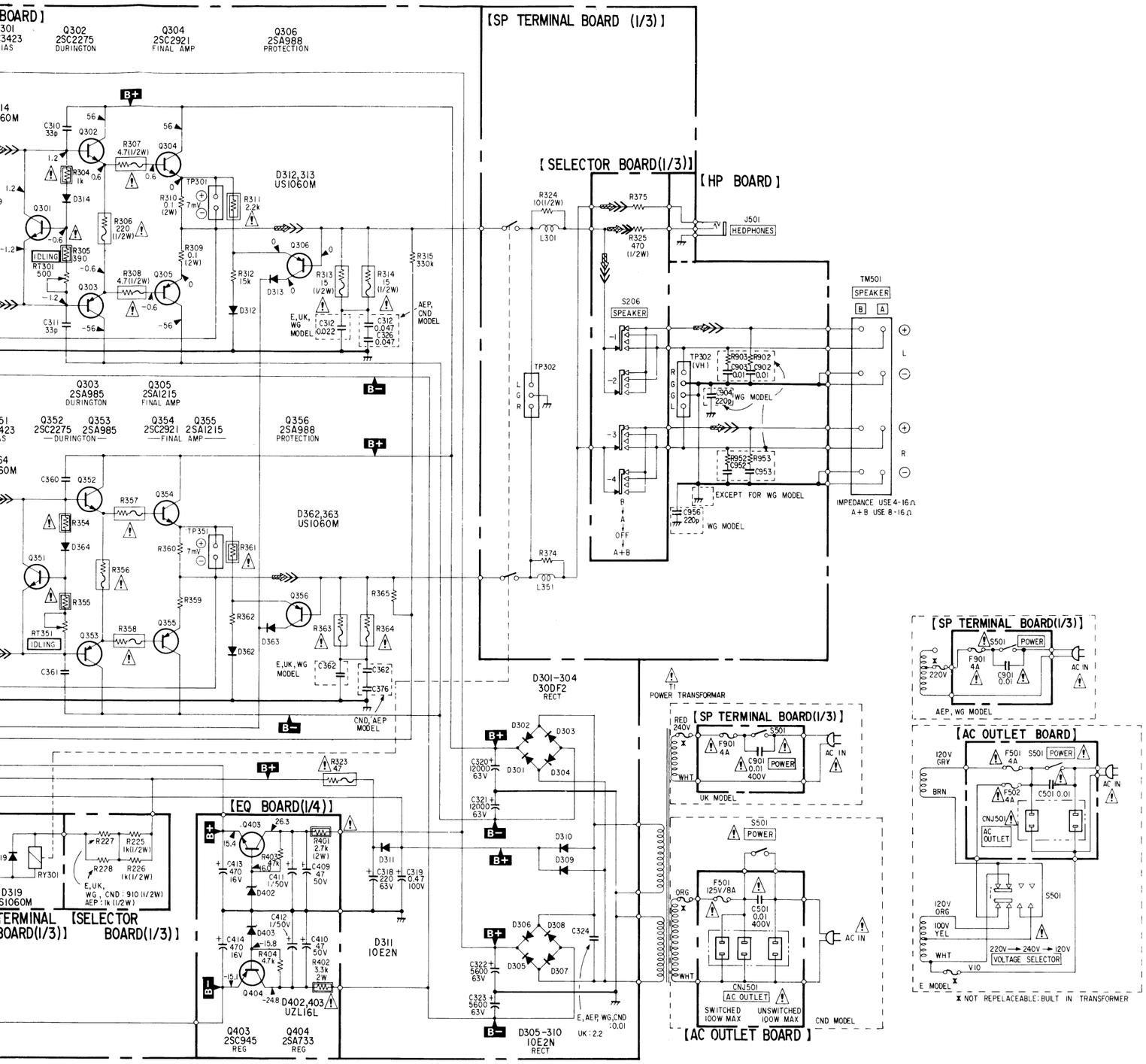

Q304
Q301
Q305
Q355
Q351
Q354
D314
D364
TP351
7mV
Q306
D312
D313
Q302
Q303
Q353
Q352
Q356
Q359
D362
D363
Q356
R362
R361
R365
C326
UK,E,West Germany MODEL
AEP, Canadian MODEL
C323
C321
C320
C322
D305
D306
D307
D309
D310
D308
D304
D303
D311
D301
D302
VH8
RED
BLK
C324
CN10A
BLK
GRN
RV102
TREBLE
RV101
BALANCE
R202
R252
R100
D208
S204
SOURCE DIRECT
ON → OFF
C252
R205
R255
R253
R256
C254
R254
C201
Q203
C206
S203
REC OUT SELECTOR
PHONO → TUNER → CD → OFF → TAPE1 → 2 → TAPE2 → 1
S202
S201
DIRECT IN → NORMAL → ADAPTOR
INPUT SELECTOR
TAPE2 (DAT)
TAPE1 (DAT)
CD → TUNER → PHONO
R211
R261
DM4
BLK
WHT
RV104
ATTENUATOR
R212
CN4
CN3
CN5
R262
D209
MUTING 20dB
12
J102
IN TAPE2 REC OUT
IN TAPE1 REC OUT
J101
CD
TUNER
E,UK, AEP MODEL
West Germany MODEL
Canadian MODEL
[PINJACK(L)BOARD]
VH12
CP7
DH8
WHT
BLK
BLK
CP4
CP3
13
[PINJACK(S) BOARD]
J103
IN ADAPTOR OUT
DIRECT IN
CN10B
AEP, UK, E, Canadian MODEL
West Germany MODEL
[A/B JUMPER BOARD]
CN6
CN7
12
[MUTING BOARD]
CP2
S205
MUTING
R213
R263
ON
OFF
11
J104
PHONO
CHASSIS
EXCEPT FOR West Germany MODEL
West Germany MODEL
[EQ BOARD]
CARTRIDGE
MC
MM
IC401
IC301
CN9
WHT
BLK
BLK
CN8
EH2
(CHASSIS)
13

19	20	21	22	23	24	25	26	27	28	29	30	31	32




[EQ BOARD(1/4)]
[SELECTOR BOARD(1/3)]
[MUTING BOARD(1/2)]
[EQ BOARD(1/4)]
[MAIN BOARD]
IC401 RC4560 EQ OUTPUT
IC301 STK3102 III POWER PRE,CASCODE CURRENT REG,A CLASS AMP
[PINJACK(S) BOARD(1/2)]
[PINJACK(L) BOARD(1/2)]
[PINJACK(S) BOARD(1/4)]
[EQ BOARD(1/4)]
[PINJACK(S) BOARD(1/4)]
[PINJACK(L) BOARD(1/2)]
[MUTING BOARD(1/2)]
[POWER LED BOARD]
IC302 μPC1237HA PROTECT CIRCUIT
[SP TERMINAL BOARD(1/3)]
[SELECTOR BOARD(1/3)]
[EQ B
D208,209 SEL2810A
D203-205 SEL2510C
D206,207 SEL2213C
Q204 2SA733 SWITCH
Q203 2SA733 SWITCH
Q202 2SC945 RIPPLE FILTER
Q201 2SD774 CURRENT REG
D201,202 US1060M
Q403 2SC945 REG
D208 SOURCE DIRECT
D209 MUTING -20dB
D207 D205 D204 D206 D203
D202 D201
OVER LOAD DET
OFFSET DET
AC OFF DET
F/F
Vcc ON MUTE
LATCH/ AUTORESET
D319 US1060M
RY301
E,UK, WG, CND : 910 (1/2W) AEP : 1k (1/2W)
PHONO
TUNER
CD
TAPE1(DAT)
TAPE2(DAT)
DIRECT IN
NORMAL
ADAPTOR
OFF
TAPE1→2
TAPE2→1
CARTRIDGE
MM → MC
WG MODEL
EXCEPT FOR WG MODEL
L-CH
R-CH

15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24



Note on Schematic Diagrams :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- Components for right channel have same values as for left channel.
- ⚠ : nonflammable resistor.
- ⚠ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PHONO
- Voltages are taken with a VOM.
  (Input impedance 10MΩ)
  Voltage variations may be noted due to normal production torerances.
- Signal path.
  ⇒: PHONO
- WG : West Germany
- CND : Canadian

SECTION 4
EXPLODED VIEWS

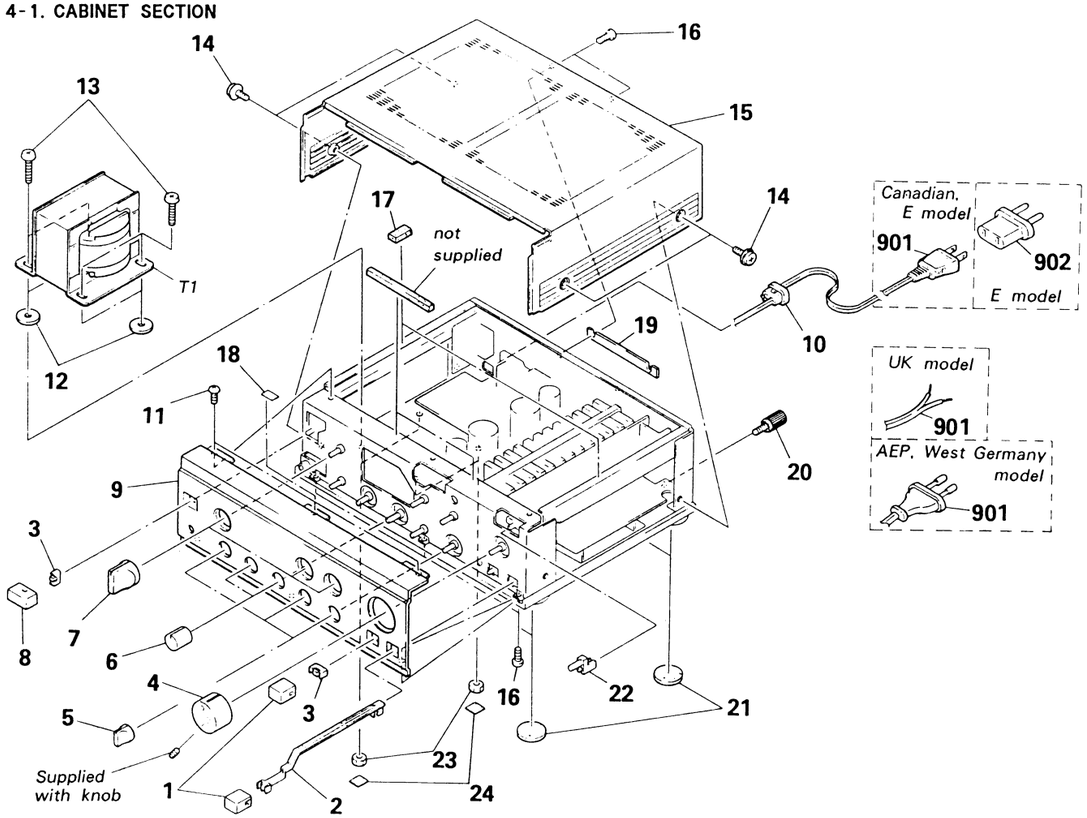
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts' Color
- WG : West Germany model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

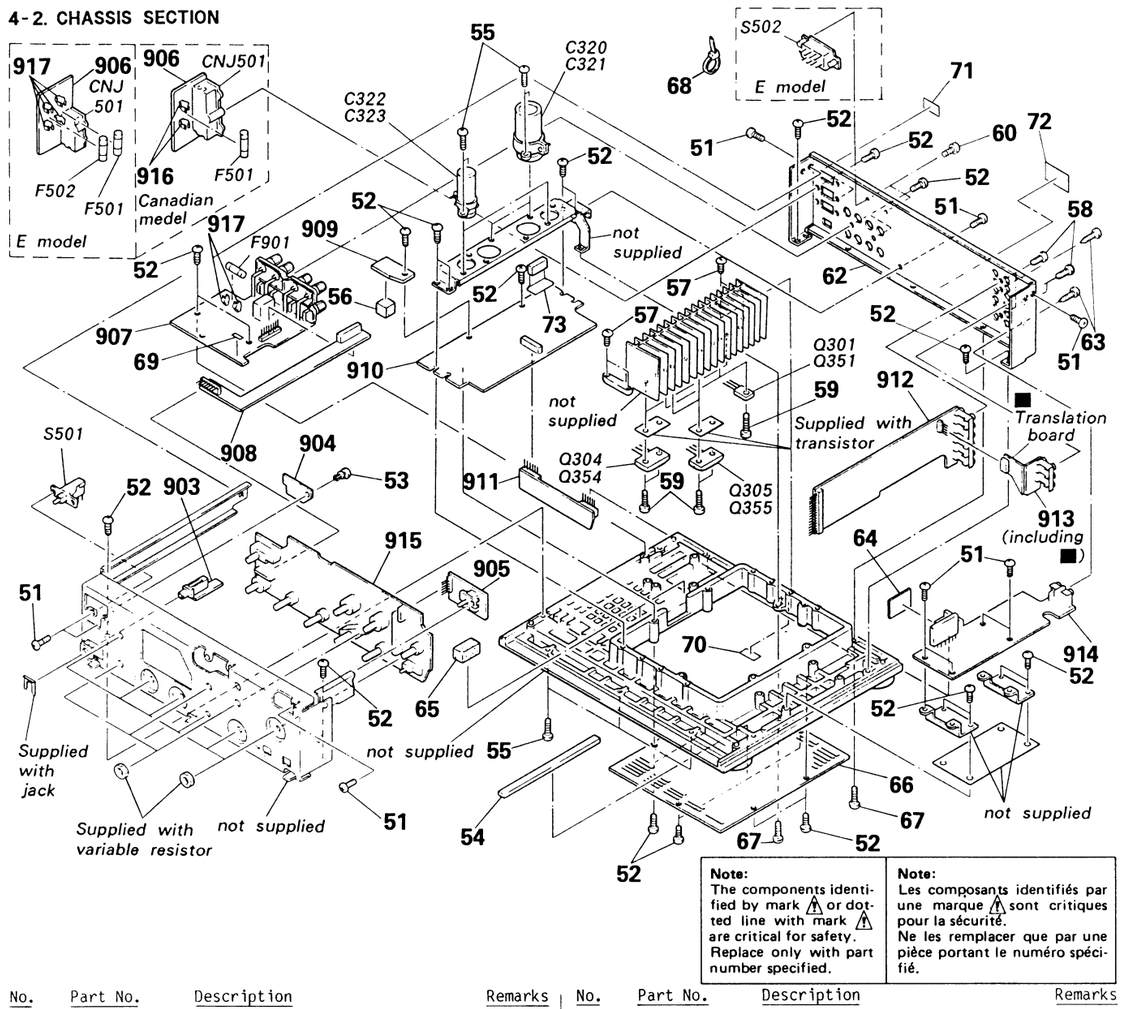
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

4-1. CABINET SECTION



No.	Part No.	Description	Remarks
1	4-908-875-01	KNOB, SQUARE	
2	4-929-227-01	JOINT	
3	4-864-307-00	RING	
4	4-929-224-01	KNOB (NA-48)	
5	4-916-745-01	KNOB (DIA.21)	
6	4-916-746-11	KNOB (DIA. 21), ROUND	
7	4-916-729-01	KNOB (DIA.29)	
8	4-908-856-01	KNOB, SQUARE	
9	A-4317-962-A	(Canadian)....PANEL ASSY, FRONT	
	A-4317-965-A	(AEP,WG,UK)...PANEL ASSY, FRONT	
	A-4323-063-A	(E).....PANEL ASSY, FRONT	
10	3-703-244-00	(Canadian,AEP,WG,UK)...BUSHING, CORD	
	3-703-571-11	(E).....BUSHING (S) (4516), CORD	
11	7-682-547-09	SCREW +BVTT 3X6 (S)	
12	4-885-984-21	(UK)...WASHER	
13	7-682-566-09	SCREW +B 4X20	
14	4-847-802-00	SCREW	
15	4-916-737-01	(Canadian,WG,UK,E)...CASE	
	4-916-737-21	(AEP).....CASE	
16	7-685-873-09	SCREW +BVTT 3X10 (S)	
17	*2-527-517-11	(UK)...CUSHION, CASE RETAINER	
18	*3-840-067-21	(UK)...SPACER (C)	
19	*4-929-232-01	SPACER	
20	3-706-165-00	SCREW	
21	*4-923-850-01	FOOT (DIA. 46)	
22	4-923-879-01	BUTTON (DIA.4)	
23	7-684-024-04	N 4, TYPE 2	
24	*4-929-266-01	CUSHION	
901	⚠1-551-478-00	(Canadian)...CORD, POWER	
	⚠1-574-381-11	(E).....CORD, POWER	
	⚠1-574-804-11	(UK).....CORD, POWER	
	⚠1-574-805-11	(AEP,WG).....CORD, POWER	
902	⚠1-526-565-00	(E)...AC PLUG ADAPTOR	
T1	⚠1-449-685-11	(Canadian)...TRANSFORMER, POWER	
T1	⚠1-449-687-11	(WG).....TRANSFORMER, POWER	
T1	⚠1-449-688-11	(AEP).....TRANSFORMER, POWER	
T1	⚠1-449-689-11	(UK).....TRANSFORMER, POWER	
T1	⚠1-449-690-11	(E).....TRANSFORMER, POWER	

4-2. CHASSIS SECTION



Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
51	7-682-547-09	SCREW +BVTT 3X6 (S)	
52	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
53	4-812-134-00	RIVET NYLON, 3.5	
54	*4-916-782-21	(UK)...DAMPER	
55	7-685-873-09	SCREW +BVTT 3X10 (S)	
56	*4-921-410-91	(UK)...CUSHION	
57	7-685-650-79	SCREW +BVTP 3X16 TYPE2 SLIT	
59	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
60	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
62	*4-929-233-03	(Canadian)...PANEL, BACK	
	*4-929-233-11	(WG,UK).....PANEL, BACK	
	*4-929-233-21	(AEP).....PANEL, BACK	
	*4-929-280-01	(E).....PANEL, BACK	
63	7-621-849-00	SCREW, TAPPING	
64	*4-916-782-61	(Canadian,UK)....DAMPER	
65	*4-921-410-81	(UK)....CUSHION	
66	*4-916-732-01	BOARD, BOTTOM	
67	7-685-876-09	SCREW +BVTT 3X16 (S)	
68	3-655-653-21	BAND (TAITON), BINDING	
69	*3-701-948-20	(E)...LABEL (T4A), FUSE	
70	*3-703-079-21	(Canadian)...LABEL, CAUTION (BACK)	
71	*3-703-270-00	(Canadian)...LABEL, AC 120V 60Hz	
72	*4-929-270-01	(Canadian)...LABEL, MODEL NUMBER	
	*4-929-272-01	(WG).....LABEL, MODEL NUMBER	
	*4-929-273-01	(UK).....LABEL, MODEL NUMBER	
	*4-929-274-01	(E).....LABEL, MODEL NUMBER	
	*4-931-906-01	(AEP).....LABEL, MODEL NUMBER	
73	*4-921-941-31	(UK)....CUSHION (FL)	
903	*1-629-749-11	PC BOARD, HP	
904	*1-629-751-11	PC BOARD, POWER LED	
905	*1-629-747-11	PC BOARD, MUTING	
906	*1-629-755-11	PC BOARD, AC OUTLET	
907	*1-629-753-11	PC BOARD, SP TERMINAL	
908	*1-629-757-11	PC BOARD, SP JUMPER	
909	*1-630-146-11	(Canadian)...PC BOARD, CLAMP	
910	*A-4333-335-A	(WG,E).....MOUNTED PCB, MAIN	
	*A-4333-343-A	(Canadian,AEP)...MOUNTED PCB, MAIN	
	*A-4333-725-A	(UK).....MOUNTED PCB, MAIN	
911	*1-629-750-11	PC BOARD, A/B JUMPER	
912	*1-629-758-11	PC BOARD, PINJACK (L)	
913	*1-629-756-11	PC BOARD, PIN JACK (S)	
914	*A-4333-336-A	(WG).....MOUNTED PCB, EQ	
	*A-4333-341-A	(AEP,E).....MOUNTED PCB, EQ	
	*A-4333-726-A	(UK).....MOUNTED PCB, EQ	
	*A-4358-218-A	(Canadian)...MOUNTED PCB, EQ	
915	*A-4410-898-A	(Canadian,WG,UK,E) ...MOUNTED PCB, SELECTOR	
916	1-533-190-11	(Canadian)...CLIP, FUSE	
917	1-533-183-11	(AEP,WG,UK,E)...HOLDER, FUSE	
C320	1-125-568-11	CAP, ELECT 12000MF	
C321	1-125-568-11	CAP, ELECT 12000MF	
C322	1-125-569-11	CAP, ELECT 5600MF	
C323	1-125-569-11	CAP, ELECT 5600MF	
CNJ501	⚠1-540-041-21	(E).....OUTLET, AC (AC OUTLET)	
CNJ501	⚠1-540-062-31	(Canadian)...OUTLET, AC (AC OUTLET)	
F501	⚠1-532-350-00	(E).....FUSE, TIME-LAG 4A	
F501	⚠1-532-510-00	(Canadian)....FUSE, GLASE TUBE 8A	
F502	⚠1-532-350-00	(E).....FUSE, TIME-LAG 4A	
F901	⚠1-532-350-00	(AEP,WG,UK)...FUSE, TIME-LAG 4A	
Q301	8-729-203-45	TRANSISTOR 2SC3423	
Q304	8-729-320-03	TRANSISTOR 2SC2921M-O	
Q305	8-729-320-01	TRANSISTOR 2SA1215M-O	
Q351	8-729-203-45	TRANSISTOR 2SC3423	
Q354	8-729-320-03	TRANSISTOR 2SC2921M-O	
Q355	8-729-320-01	TRANSISTOR 2SA1215M-O	
S501	⚠1-554-920-31	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	
S502	⚠1-570-307-11	(E)....SWITCH, VOLTAGE CHANGE (VOLTAGE SELECTOR)	

NOTE:

- Due to sta
  list may b
  the diagran
- Items mar
  are seldom
  delay shou
  items.
- If there ar
  such as a
  circuit part
  resistors in

Ref.No.	Par
901	⚠1-5
	⚠1-5
	⚠1-5
	⚠1-5
902	⚠1-5
903	*1-6
904	*1-6
905	*1-6
906	*1-6
907	*1-6
908	*1-6
909	*1-6
910	*A-4
	*A-4
	*A-4
911	*1-6
912	*1-6
913	*1-6
914	*A-4
	*A-4
	*A-4
	*A-4
915	*A-4
916	1-5
917	1-5
C101	1-1
C102	1-1
C103	1-1
C104	1-1
C105	1-1
C106	1-1
C108	1-1
C109	1-1
C151	1-1
C152	1-1
C153	1-1
C154	1-1
C155	1-1
C156	1-1
C158	1-1
C159	1-1
C201	1-1
C202	1-1

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

- WG : West Germany model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Remarks
901	⚠1-551-478-00	(Canadian)...CORD, POWER	
	⚠1-574-381-11	(E).....CORD, POWER	
	⚠1-574-804-11	(UK).....CORD, POWER	
	⚠1-574-805-11	(AEP,WG).....CORD, POWER	
902	⚠1-526-565-00	(E).....AC PLUG ADAPTOR	
903	*1-629-749-11	PC BOARD, HP	
904	*1-629-751-11	PC BOARD, POWER LED	
905	*1-629-747-11	PC BOARD, MUTING	
906	*1-629-755-11	PC BOARD, AC OUTLET	
907	*1-629-753-11	PC BOARD, SP TERMINAL	
908	*1-629-757-11	PC BOARD, SP JUMPER	
909	*1-630-146-11	(Canadian)...PC BOARD, CLAMP	
910	*A-4333-335-A	(WG,E).....MOUNTED PCB, MAIN	
	*A-4333-343-A	(Canadian,AEP)...MOUNTED PCB, MAIN	
	*A-4333-725-A	(UK).....MOUNTED PCB, MAIN	
911	*1-629-750-11	PC BOARD, A/B JUMPER	
912	*1-629-758-11	PC BOARD, PINJACK (L)	
913	*1-629-756-11	PC BOARD, PIN JACK (S)	
914	*A-4333-336-A	(WG).....MOUNTED PCB, EQ	
	*A-4333-341-A	(AEP,E).....MOUNTED PCB, EQ	
	*A-4333-726-A	(UK).....MOUNTED PCB, EQ	
	*A-4358-218-A	(Canadian)...MOUNTED PCB, EQ	
915	*A-4410-898-A	(Canadian,WG,UK,E) ...MOUNTED PCB, SELECTOR	
916	1-533-190-11	(Canadian)...CLIP, FUSE	
917	1-533-183-11	(AEP,WG,UK,E)...HOLDER, FUSE	
C101	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C102	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C103	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C104	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C105	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C106	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C108	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C109	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C151	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C152	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C153	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C154	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C155	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C156	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C158	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C159	1-162-284-31	(WG)...CERAMIC 150PF 10% 50V	
C201	1-130-471-00	MYLAR 0.001MF 5% 50V	
C202	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C203	1-130-479-00	MYLAR 0.0047MF 5% 50V	
C204	1-136-159-00	FILM 0.033MF 5% 50V	
C205	1-123-369-00	ELECT 4.7MF 20% 50V	
C206	1-123-380-00	ELECT 1MF 20% 63V	
C207	1-124-918-11	ELECT 47MF 20% 63V	
C251	1-130-471-00	MYLAR 0.001MF 5% 50V	
C252	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C253	1-130-479-00	MYLAR 0.0047MF 5% 50V	
C254	1-136-159-00	FILM 0.033MF 5% 50V	
C302	1-123-369-00	ELECT 4.7MF 20% 50V	
C303	1-101-888-00	(E,AEP,WG)...CERAMIC 68PF 5% 50V	
C303	1-104-276-00	(Canadian,UK) ...POLYSTYRENE 68PF 10% 50V	
C304	1-123-360-00	(E,AEP,WG).....ELECT 100MF 20% 50V	
C304	1-126-052-11	(Canadian,UK)...ELECT 100MF 20% 50V	
C305	1-102-936-00	(E,AEP,WG)...CERAMIC 3PF 0.5PF 50V	
C305	1-107-276-11	(Canadian,UK)...MICA 3PF 0.5% 500V	
C306	1-123-369-00	(E,AEP,WG)...ELECT 4.7MF 20% 63V	
C307	1-123-369-00	(E,AEP,WG)...ELECT 4.7MF 20% 63V	
C308	1-102-951-00	(E,AEP,WG)...CERAMIC 15PF 5% 50V	
C308	1-104-263-00	(Canadian,UK) ...POLYSTYRENE 15PF 10% 125V	
C309	1-123-359-00	(E,AEP,WG,Canadian) ...ELECT 47MF 20% 50V	
C309	1-124-910-11	(UK).....ELECT 47MF 20% 50V	
C310	1-102-963-00	(E,AEP,WG,Canadian) ...CERAMIC 33PF 5% 50V	
C310	1-107-159-00	(UK).....MICA 33PF 5% 500V	
C311	1-102-963-00	(E,AEP,WG,Canadian) ...CERAMIC 33PF 5% 50V	
C311	1-107-159-00	(UK).....MICA 33PF 5% 500V	
C312	1-130-487-00	(E,WG,UK).....MYLAR 0.022MF 5% 50V	
C312	1-136-161-00	(AEP,Canadian)...FILM 0.047MF 5% 50V	
C313	1-130-471-00	MYLAR 0.001MF 5% 50V	
C314	1-123-333-00	ELECT 100MF 20% 25V	
C315	1-130-487-00	MYLAR 0.022MF 5% 50V	
C317	1-123-333-00	ELECT 100MF 20% 25V	
C318	1-123-604-00	ELECT 220MF 20% 63V	
C319	1-123-379-00	ELECT 0.47MF 20% 100V	
C320	1-125-568-11	CAP, ELECT 12000MF	
C321	1-125-568-11	CAP, ELECT 12000MF	
C322	1-125-569-11	CAP, ELECT 5600MF	
C323	1-125-569-11	CAP, ELECT 5600MF	

Ref.No.	Part No.	Description
C324	1-136-601-11	(E,AEP,WG,Canadian) ...FILM 0.01MF 10% 630V
C324	1-136-880-11	(UK).....FILM 2.2MF 10% 160V
C326	1-136-161-00	(AEP,Canadian)...FILM 0.047MF 5% 50V
C330	1-162-282-31	(WG).....CERAMIC 100PF 5% 50V
C331	1-102-973-00	(E,AEP,WG)...CERAMIC 100PF 5% 50V
C331	1-136-808-11	(UK,Canadian)...FILM 100MF 5% 100V
C333	1-161-370-00	(WG)...CERAMIC 0.01MF 30% 25V
C352	1-123-369-00	ELECT 4.7MF 20% 50V
C353	1-101-888-00	(E,AEP,WG)...CERAMIC 68PF 5% 50V
C353	1-104-276-00	(Canadian,UK) ...POLYSTYRENE 68PF 10% 50V
C354	1-123-360-00	(E,AEP,WG)...ELECT 100MF 20% 50V
C354	1-126-052-11	(Canadian,UK) ...ELECT 100PF 20% 50V
C355	1-102-936-00	(E,AEP,WG)...CERAMIC 3PF 0.5PF 50V
C355	1-107-276-11	(Canadian,UK)...MAIC 3PF 0.5PF 500V
C358	1-102-951-00	(E,AEP,WG)...CERAMIC 15PF 5% 50V
C358	1-104-263-00	(Canadian,UK) ...POLYSTYRENE 15PF 10% 125V
C359	1-123-359-00	(E,AEP,WG,Canadian) ...ELECT 47MF 20% 50V
C359	1-124-910-11	(UK).....ELECT 47MF 20% 50V
C360	1-102-963-00	(E,AEP,WG,Canadian) ...CERAMIC 33PF 5% 50V
C360	1-107-159-00	(UK).....MICA 33MF 5% 500V
C361	1-102-963-00	(E,AEP,WG,Canadian) ...CERAMIC 33PF 5% 50V
C361	1-107-159-00	(UK).....MICA 33MF 5% 500V
C362	1-130-487-00	(E,WG,UK)...MYLAR 0.022MF 5% 50V
C362	1-136-161-00	(AEP,Canadian) ...FILM 0.047MF 5% 50V
C376	1-136-161-00	(AEP,Canadian) ...FILM 0.047MF 5% 50V
C380	1-162-282-31	(WG)...CERAMIC 100PF 5% 50V
C381	1-102-973-00	(E,AEP,WG)...CERAMIC 100PF 5% 50V
C381	1-136-808-11	(Canadian,UK)...FILM 100PF 5% 100V
C401	1-101-361-00	(E,AEP).....CERAMIC 150PF 5% 50V
C401	1-102-112-00	(Canadian)...CERAMIC 330PF 10% 50V
C401	1-102-973-00	(WG).....CERAMIC 100PF 5% 50V
C401	1-104-282-11	(UK).....POLYSTYRENE 150PF 5% 50V
C402	1-123-369-00	ELECT 4.7MF 20% 50V
C403	1-124-472-11	(AEP,E,WG)...ELECT 470MF 20% 10V
C403	1-124-120-11	(Canadian)...ELECT 220MF 20% 16V
C403	1-126-103-11	(UK).....ELECT 470MF 20% 10V
C404	1-130-341-00	(UK,Canadian)...FILM 0.056MF 3% 100V
C404	1-136-162-00	(AEP,E,WG).....FILM 0.056MF 5% 50V
C405	1-130-971-00	(UK,Canadian)...FILM 0.016MF 3% 100V
C405	1-136-032-51	(AEP,E,WG).....FILM 0.016MF 5% 50V
C406	1-123-333-00	ELECT 100MF 20% 16V
C407	1-130-479-00	MYLAR 0.0047MF 5% 50V
C408	1-123-356-00	(E,AEP,WG)...ELECT 10MF 20% 50V
C408	1-123-380-00	(Canadian)...ELECT 1MF 20% 50V
C408	1-126-059-11	(UK).....ELECT 10MF 20% 50V
C409	1-123-359-00	(E,AEP,WG).....ELECT 47MF 20% 50V
C409	1-124-910-11	(UK,Canadian)...ELECT 47MF 20% 50V
C410	1-123-359-00	(E,AEP,WG).....ELECT 47MF 20% 50V
C410	1-124-910-11	(UK,Canadian)...ELECT 47MF 20% 50V
C411	1-123-380-00	ELECT 1MF 20% 50V
C412	1-123-380-00	ELECT 1MF 20% 50V
C413	1-126-103-11	ELECT 470MF 20% 16V
C414	1-126-103-11	ELECT 470MF 20% 16V
C430	1-102-816-00	(WG)...CERAMIC 120PF 5% 50V
C431	1-162-282-31	(WG)...CERAMIC 100PF 5% 50V
C451	1-101-361-00	(E,AEP).....CERAMIC 150PF 5% 50V
C451	1-102-112-00	(Canadian)...CERAMIC 330PF 10% 50V
C451	1-102-973-00	(WG).....CERAMIC 100PF 5% 50V
C451	1-104-282-11	(UK).....POLYSTYRENE 150PF 5% 50V
C452	1-123-369-00	ELECT 4.7MF 20% 50V
C453	1-124-472-11	(E,AEP,WG)...ELECT 470MF 20% 10V
C453	1-124-120-11	(Canadian)...ELECT 220MF 20% 16V
C453	1-126-103-11	(UK).....ELECT 470MF 20% 10V
C454	1-130-341-00	(UK,Canadian)...FILM 0.056MF 3% 100V
C454	1-136-162-00	(E,AEP,WG).....FILM 0.056MF 5% 50V
C455	1-130-971-00	(UK,Canadian)...FILM 0.016MF 3% 100V
C455	1-136-032-51	(E,AEP,WG).....FILM 0.016MF 5% 50V
C457	1-130-479-00	MYLAR 0.0047MF 5% 50V
C458	1-123-356-00	(E,AEP,WG)...ELECT 10MF 20% 50V
C458	1-123-380-00	(Canadian)...ELECT 1MF 20% 50V
C458	1-126-059-11	(UK).....ELECT 10MF 20% 50V
C480	1-102-816-00	(WG)...CERAMIC 120PF 5% 50V
C481	1-162-282-31	(WG)...CERAMIC 100PF 5% 50V
C501	1-161-744-00	CERAMIC 0.01MF 400V
C902	1-136-153-00	(UK)...FILM 0.01MF 5% 50V
C903	1-136-153-00	(UK)...FILM 0.01MF 5% 50V
C904	1-102-978-00	(WG)...CERAMIC 220PF 5% 50V
C952	1-136-153-00	(UK)...FILM 0.01MF 5% 50V
C953	1-136-153-00	(UK)...FILM 0.01MF 5% 50V
C954	1-102-978-00	(WG)...CERAMIC 220PF 5% 50V
CN1	*1-561-651-00	SOCKET, CONNECTOR 7P
CN2	*1-561-651-00	SOCKET, CONNECTOR 7P
CN3	1-568-118-11	SOCKET, CONNECTOR 16P
CN4	*1-562-334-00	SOCKET, CONNECTOR 10P
CN5	*1-561-651-00	SOCKET, CONNECTOR 7P
CN6	1-568-203-11	PIN, CONNECTOR (PC BOARD) 11P
CN7	1-568-203-11	PIN, CONNECTOR (PC BOARD) 11P
CN8	*1-563-381-11	SOCKET, CONNECTOR 11P
CN9	*1-566-451-11	HOUSING, CONNECTOR 3P
CN10	*1-563-381-11	SOCKET, CONNECTOR 11P
CN11	1-568-117-11	SOCKET, CONNECTOR 14P
CN12	*1-565-484-11	CONNECTOR, BOARD TO BOARD 8P
CNJ501	1-540-041-21	(E)....OUTLET, AC (AC OUT LET)
CNJ501	1-540-062-31	(Canadian)...OUTLET, AC (AC OUT LET)
CNP604	*1-508-694-00	CONNECTOR PIN 8P
CP1	*1-560-532-00	PIN, CONNECTOR 7P
CP2	*1-560-532-00	PIN, CONNECTOR 7P
CP4	*1-568-202-11	PIN, CONNECTOR (PC BOARD) 10P

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Ref.No.	Part No.	Description
CP5	1-568-120-11	PIN, CONNECTOR (PC BOARD) 7P
CP6	1-568-120-11	PIN, CONNECTOR (PC BOARD) 7P
CP7	*1-568-204-11	PIN, CONNECTOR (PC BOARD) 16P
D201	8-719-000-26	DIODE US1060M
D202	8-719-000-26	DIODE US1060M
D203	8-719-303-00	DIODE SEL2510C
D204	8-719-303-00	DIODE SEL2510C
D205	8-719-303-00	DIODE SEL2510C
D206	8-719-300-82	DIODE SEL2213C
D207	8-719-300-82	DIODE SEL2213C
D208	8-719-301-49	DIODE SEL2810A
D209	8-719-301-49	DIODE SEL2810A
D301	8-719-230-02	DIODE 30DF2
D302	8-719-230-02	DIODE 30DF2
D303	8-719-230-02	DIODE 30DF2
D304	8-719-230-02	DIODE 30DF2
D305	8-719-200-77	DIODE 10E2N
D306	8-719-200-77	DIODE 10E2N
D307	8-719-200-77	DIODE 10E2N
D308	8-719-200-77	DIODE 10E2N
D309	8-719-200-77	DIODE 10E2N
D310	8-719-200-77	DIODE 10E2N
D311	8-719-200-77	DIODE 10E2N
D312	8-719-000-26	DIODE US1060M
D313	8-719-000-26	DIODE US1060M
D314	8-719-000-26	DIODE US1060M
D319	8-719-000-26	DIODE US1060M
D362	8-719-000-26	DIODE US1060M
D363	8-719-000-26	DIODE US1060M
D364	8-719-000-26	DIODE US1060M
D401	8-719-933-47	DIODE HZS7B2L
D402	8-719-001-97	DIODE UZL-16L
D403	8-719-001-97	DIODE UZL-16L
EH2	*1-564-508-11	PLUG, CONNECTOR 5P
EH3	*1-564-508-11	PLUG, CONNECTOR 5P
F501	⚠1-532-350-00	(E).....FUSE, TIME-LAG 4A
F501	⚠1-532-510-00	(Canadian)....FUSE, GLASE TUBE 8A
F502	⚠1-532-350-00	(E).....FUSE, TIME-LAG 4A
F901	⚠1-532-350-00	(AEP,WG,UK)...FUSE, TIME-LAG 4A
IC301	8-749-920-70	IC STK3102-3
IC302	8-759-111-68	IC UPC1237HA
IC401	8-759-981-96	IC RC4560D
J101	1-565-320-51	JACK, PIN 6P (TUNER/CD/TAPE1,RECOUT)
J102	1-565-320-41	JACK, PIN 6P (TAPE2/REC OUT)
J103	1-565-320-51	JACK, PIN 6P (ADAPTOR IN,OUT/DIRECT IN)
J104	1-568-250-11	JACK, PIN 2P (PHONO)
L301	*1-420-872-00	(E,AEP,WG,UK)...COIL, AIR CORE
L301	*1-420-872-31	(Canadian).....COIL, AIR CORE
L351	*1-420-872-00	(E,AEP,WG,UK)...COIL, AIR CORE
L351	*1-420-872-31	(Canadian).....COIL, AIR CORE
L401	1-413-101-00	(WG)...COIL INPUT
L402	1-413-101-00	(WG)...COIL INPUT
L451	1-413-101-00	(WG)...COIL INPUT
L452	1-413-101-00	(WG)...COIL INPUT
Q201	8-729-177-42	TRANSISTOR 2SD774-3
Q202	8-729-194-57	TRANSISTOR 2SC945P
Q203	8-729-713-36	TRANSISTOR 2SA733Q
Q204	8-729-713-36	TRANSISTOR 2SA733Q
Q301	8-729-203-45	TRANSISTOR 2SC3423
Q302	8-729-127-53	TRANSISTOR 2SC2275-P
Q303	8-729-190-53	TRANSISTOR 2SA985A
Q304	8-729-320-03	TRANSISTOR 2SC2921M-O
Q305	8-729-320-01	TRANSISTOR 2SA1215M-O
Q306	8-729-108-04	TRANSISTOR 2SA988F
Q351	8-729-203-45	TRANSISTOR 2SC3423
Q352	8-729-127-53	TRANSISTOR 2SC2275-P
Q353	8-729-190-53	TRANSISTOR 2SA985A-P
Q354	8-729-320-03	TRANSISTOR 2SC2921M-O
Q355	8-729-320-01	TRANSISTOR 2SA1215M-O
Q356	8-729-108-04	TRANSISTOR 2SA988F
Q401	8-729-354-52	TRANSISTOR 2SC2545
Q402	8-729-354-52	TRANSISTOR 2SC2545
Q403	8-729-194-57	TRANSISTOR 2SC945P
Q404	8-729-173-36	TRANSISTOR 2SA733Q
Q451	8-729-354-52	TRANSISTOR 2SC2545
Q452	8-729-354-52	TRANSISTOR 2SC2545
R000	1-247-725-11	CARBON 10K 5% 1/4W
R101	1-246-545-00	CARBON 1M 5% 1/4W
R102	1-246-545-00	CARBON 1M 5% 1/4W
R103	1-246-545-00	CARBON 1M 5% 1/4W
R104	1-246-545-00	CARBON 1M 5% 1/4W
R105	1-247-713-11	CARBON 1K 5% 1/4W
R106	1-249-417-11	CARBON 1K 5% 1/4W
R107	1-246-545-00	CARBON 1M 5% 1/4W
R108	1-246-545-00	CARBON 1M 5% 1/4W
R109	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R110	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R111	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R112	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R113	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R114	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R151	1-246-545-00	CARBON 1M 5% 1/4W
R152	1-246-545-00	CARBON 1M 5% 1/4W
R153	1-246-545-00	CARBON 1M 5% 1/4W
R154	1-246-545-00	CARBON 1M 5% 1/4W
R155	1-247-713-11	CARBON 1K 5% 1/4W
R156	1-249-417-11	CARBON 1K 5% 1/4W
R157	1-246-545-00	CARBON 1M 5% 1/4W
R158	1-246-545-00	CARBON 1M 5% 1/4W
R159	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R160	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R161	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R162	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R163	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R164	1-249-417-11	(WG)...CARBON 1K 5% 1/4W
R201	1-249-417-11	CARBON 1K 5% 1/4W
R202	1-247-700-11	CARBON 100 5% 1/4W
R203	1-247-717-11	CARBON 2.2K 5% 1/4W
R204	1-247-722-11	CARBON 5.6K 5% 1/4W
R205	1-249-753-15	CARBON 4.7M 5% 1/4W
R206	1-249-753-15	CARBON 4.7M 5% 1/4W
R208	1-247-170-00	CARBON 43K 5% 1/4W

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Ref.No.	Part No.	Description				
R209	1-247-152-00	CARBON	7.5K	5%	1/4W	
R210	1-249-464-11	CARBON	39K	5%	1/4W	
R211	1-249-465-11	CARBON	47K	5%	1/4W	
R212	1-249-465-11	CARBON	47K	5%	1/4W	
R213	1-247-722-11	CARBON	5.6K	5%	1/4W	
R214	1-247-693-11	CARBON	27	5%	1/4W	
R215	1-247-754-11	CARBON	1.5K	5%	1/2W	
R216	1-247-754-11	CARBON	1.5K	5%	1/2W	
R217	1-247-750-11	CARBON	680	5%	1/2W	
R218	1-249-462-11	CARBON	22K	5%	1/4W	
R219	1-249-465-11	CARBON	47K	5%	1/4W	
R220	1-247-749-11	CARBON	560	5%	1/2W	
R221	1-247-717-11	CARBON	2.2K	5%	1/4W	
R222	1-247-725-11	CARBON	10K	5%	1/4W	
R223	1-249-465-11	CARBON	47K	5%	1/4W	
R224	1-247-721-11	CARBON	4.7K	5%	1/4W	
R225	1-247-752-11	CARBON	1K	5%	1/2W	
R226	1-247-752-11	CARBON	1K	5%	1/2W	
R227	1-247-752-11	(E,WG,Canadian,UK) ...CARBON	1K	5%	1/2W	
R227	1-247-239-00	(AEP)...CARBON	910	5%	1/2W	
R228	1-247-752-11	(E,WG,Canadian,UK) ...CARBON	1K	5%	1/2W	
R228	1-247-239-00	(AEP)...CARBON	910	5%	1/2W	
R251	1-249-417-11	CARBON	1K	5%	1/4W	
R252	1-247-700-11	CARBON	100	5%	1/4W	
R253	1-247-717-11	CARBON	2.2K	5%	1/4W	
R254	1-247-722-11	CARBON	5.6K	5%	1/4W	
R255	1-249-753-15	CARBON	4.7M	5%	1/4W	
R256	1-249-753-15	CARBON	4.7M	5%	1/4W	
R258	1-247-170-00	CARBON	43K	5%	1/4W	
R259	1-247-152-00	CARBON	7.5K	5%	1/4W	
R260	1-249-464-11	CARBON	39K	5%	1/4W	
R261	1-249-465-11	CARBON	47K	5%	1/4W	
R262	1-249-465-11	CARBON	47K	5%	1/4W	
R263	1-247-722-11	CARBON	5.6K	5%	1/4W	
R301	1-247-713-11	CARBON	1K	5%	1/4W	
R302	1-249-599-11	CARBON	91K	5%	1/4W	
R303	1-249-668-11	CARBON	620	5%	1/2W	
R304	1-247-713-11	CARBON	1K	5%	1/4W	
R305	1-247-707-11	CARBON	390	5%	1/4W	
R306	⚠ 1-212-990-00	FUSIBLE	220	5%	1/2W	F
R307	⚠ 1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R308	⚠ 1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R309	1-217-611-00	METAL PLATE	0.1	10%	2W	
R310	1-217-611-00	METAL PLATE	0.1	10%	2W	
R311	⚠ 1-247-717-11	CARBON	2.2K	5%	1/4W	F
R312	1-249-460-11	CARBON	15K	5%	1/4W	
R313	⚠ 1-212-962-00	FUSIBLE	15	5%	1/2W	F
R314	⚠ 1-212-962-00	FUSIBLE	15	5%	1/2W	F
R315	1-247-891-00	CARBON	330K	5%	1/4W	
R316	1-247-725-11	CARBON	10K	5%	1/4W	
R317	1-247-887-00	CARBON	220K	5%	1/4W	
R318	1-247-881-00	CARBON	120K	5%	1/4W	
R319	1-249-461-11	CARBON	18K	5%	1/4W	
R320	1-247-721-11	CARBON	4.7K	5%	1/4W	
R321	1-249-462-11	CARBON	22K	5%	1/4W	
R323	⚠ 1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R324	1-247-727-11	CARBON	10	5%	1/2W	
R325	1-247-747-11	CARBON	470	5%	1/2W	

Ref.No.	Part No.	Description				
R326	1-249-721-11	CARBON	100K	5%	1/2W	
R327	1-247-708-11	CARBON	470	5%	1/4W	
R351	1-247-713-11	CARBON	1K	5%	1/4W	
R352	1-249-599-11	CARBON	91K	5%	1/4W	
R353	1-249-668-11	CARBON	620	5%	1/2W	
R354	1-247-713-11	CARBON	1K	5%	1/4W	
R355	1-247-707-11	CARBON	390	5%	1/4W	
R356	⚠ 1-212-990-00	FUSIBLE	220	5%	1/2W	F
R357	⚠ 1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R358	⚠ 1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R359	1-217-611-00	METAL PLATE	0.1	10%	2W	
R360	1-217-611-00	METAL PLATE	0.1	10%	2W	
R361	⚠ 1-247-717-11	CARBON	2.2K	5%	1/4W	F
R362	1-249-460-11	CARBON	15K	5%	1/4W	
R363	⚠ 1-212-962-00	FUSIBLE	15	5%	1/2W	F
R364	⚠ 1-212-962-00	FUSIBLE	15	5%	1/2W	F
R365	1-247-891-00	CARBON	330K	5%	1/4W	
R374	1-247-727-11	CARBON	10	5%	1/2W	
R375	1-247-747-11	CARBON	470	5%	1/2W	
R376	1-249-721-11	CARBON	100K	5%	1/2W	
R377	1-247-708-11	CARBON	470	5%	1/4W	
R401	⚠ 1-216-459-00	METAL OXIDE	2.7K	5%	2W	F
R402	⚠ 1-215-895-11	METAL OXIDE	3.3K	5%	2W	F
R403	1-247-721-11	CARBON	4.7K	5%	1/4W	
R404	1-247-721-11	CARBON	4.7K	5%	1/4W	
R405	1-247-706-11	(E,AEP,UK,Canadian) ...CARBON	330	5%	1/4W	
R406	1-249-469-11	CARBON	100K	5%	1/4W	
R407	1-247-700-11	CARBON	100	5%	1/4W	
R408	1-249-469-11	CARBON	100K	5%	1/4W	
R409	1-247-713-11	CARBON	1K	5%	1/4W	
R410	1-247-713-11	CARBON	1K	5%	1/4W	
R411	1-247-725-11	CARBON	10K	5%	1/4W	
R412	1-249-484-11	CARBON	6.8	5%	1/2W	
R413	1-247-739-11	CARBON	100	5%	1/2W	
R414	1-247-138-00	CARBON	2K	5%	1/4W	
R415	1-247-700-11	CARBON	100	5%	1/4W	
R416	1-214-937-00	CARBON	1M	5%	1/2W	
R417	1-249-844-11	CARBON	56K	5%	1/2W	
R418	1-249-818-11	CARBON	4.7K	1%	1/2W	
R419	1-247-713-11	CARBON	1K	5%	1/4W	
R431	1-247-713-11	(WG)...CARBON	1K	5%	1/4W	
R432	1-247-713-11	(WG)...CARBON	1K	5%	1/4W	
R455	1-247-706-11	(E,AEP,UK,Canadian) ...CARBON	330	5%	1/4W	
R456	1-249-469-11	CARBON	100K	5%	1/4W	
R457	1-247-700-11	CARBON	100	5%	1/4W	
R458	1-249-469-11	CARBON	100K	5%	1/4W	
R459	1-247-713-11	CARBON	1K	5%	1/4W	
R460	1-247-713-11	CARBON	1K	5%	1/4W	
R461	1-247-725-11	CARBON	10K	5%	1/4W	
R462	1-249-484-11	CARBON	6.8	5%	1/2W	
R463	1-247-739-11	CARBON	100	5%	1/2W	
R465	1-247-700-11	CARBON	100	5%	1/4W	

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Ref.No.	Part No.	Description
R466	1-214-937-00	CARBON 1M 5% 1/2W
R467	1-249-844-11	CARBON 56K 5% 1/2W
R468	1-249-818-11	CARBON 4.7K 1% 1/2W
R469	1-247-713-11	CARBON 1K 5% 1/4W
R481	1-247-713-11	(WG)...CARBON 1K 5% 1/4W
R482	1-247-713-11	(WG)...CARBON 1K 5% 1/4W
R902	1-247-727-11	(WG)...CARBON 10 5% 1/2W
R903	1-247-727-11	(WG)...CARBON 10 5% 1/2W
RT301	1-237-455-11	RES, ADJ, CARBON 500
RT351	1-237-455-11	RES, ADJ, CARBON 500
RV101	1-238-448-11	RES, VAR, CARBON 150K/150K (BALANCE)
RV102	1-238-446-11	RES, VAR, CARBON 250K/250K (TREBLE)
RV103	1-238-447-11	RES, VAR, CARBON 25K/500K (BASS)
RV104	1-237-472-11	RES, VAR, CARBON 120K/120K(ATTENUATOR)
RY301	1-515-501-00	RELAY
S201	1-571-824-11	SWITCH, ROTARY (INPUT SELECTOR)
S202	1-571-826-11	SWITCH, ROTARY (INPUT SELECTOR)
S203	1-571-823-11	SWITCH, ROTARY SLIDE(REC OUT SELECTOR)
S204	1-571-828-11	SWITCH, PUSH (1 KEY)(SOURCE DIRECT)
S205	1-571-827-11	SWITCH, PUSH (1 KEY)(MUTING)
S206	1-571-822-11	SWITCH, ROTARY SLIDE (SPEAKER)
S207	1-571-825-11	SWITCH, ROTARY (MODE)
S401	1-571-111-11	SWITCH, PUSH (1 KEY)(CARTRIDGE)
S501	⚠1-554-920-31	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
S502	⚠1-570-307-11	(E)...SWITCH, VOLTAGE CHANGE (VOLTAGE SELECTOR)
T1	⚠1-449-685-11	(Canadian)...TRANSFORMER, POWER
T1	⚠1-449-687-11	(WG).....TRANSFORMER, POWER
T1	⚠1-449-688-11	(AEP).....TRANSFORMER, POWER
T1	⚠1-449-689-11	(UK).....TRANSFORMER, POWER
T1	⚠1-449-690-11	(E).....TRANSFORMER, POWER
TM501	1-537-235-11	TERMINAL BOARD (SP)
TP301	1-535-135-00	BASE POST 14MM (10MM PITCH) 2P
TP351	1-535-135-00	BASE POST 14MM (10MM PITCH) 2P
VH2	*1-564-321-00	PIN, CONNECTOR 2P
VH3	1-564-320-00	PIN, CONNECTOR 2P
VH4	*1-564-321-00	(AEP,UK,WG)....PIN, CONNECTOR 2P
VH5	*1-565-792-11	PIN, CONNECTOR 2P
VH6	*1-564-321-00	(AEP,UK,WG)....PIN, CONNECTOR 2P
VH8	*1-564-241-00	PIN, CONNECTOR 4P
VH9	*1-560-595-21	TERMINAL (WITH BASE)
VH11	1-564-321-00	(Canadian,E)...PIN, CONNECTOR 2P
VH12	1-564-320-00	PIN, CONNECTOR 2P
VH20	*1-535-141-00	(E)...BASE POST 22MM (10MM PITCH) 4P
		ACCESSORY & PACKING MATERIAL
	3-786-976-11	(Canadian,UK,E)...MANUAL, INSTRUCTION
	3-786-976-41	(AEP,WG).....MANUAL, INSTRUCTION
	*4-929-219-01	CUSHION
	*4-929-263-11	INDIVIDUAL CARTON

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.